



JC10 Rec'd PCT/PTO 18 JUL 2005

PCT #3

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number 10/530,981

Filing Date April 11, 2005

First Named Inventor Masahiro Hamada

Art Unit Not yet assigned

Examiner Name Not yet assigned

Attorney Docket Number 576P072

ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	-Form PTO-1449
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	-Copy of non US references cited - 7
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	-Copy of the International Search Report dated 1/20/04.
<input type="checkbox"/> Reply to Missing Parts/Incomplete Application	<input type="checkbox"/> Landscape Table on CD	
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53		

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Nields & Lemack		
Signature			
Printed name	Kevin S. Lemack		
Date	July 14, 2005	Reg. No.	32,579

CERTIFICATE OF TRANSMISSION/MAILING

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Typed or printed name	Kevin S. Lemack	Date	July 14, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Masahiro Hamada et al.
Serial No. : 10/530,981
Filed : April 11, 2005
For : PROCESS FOR THE PRODUCTION OF SULFOALKYL-
CONTAINING POLYMERS
Examiner : Not yet assigned
Art Unit : Not yet assigned
Confirmation No: Not yet assigned
Attorney
Docket No. : 576P072

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

INFORMATION DISCLOSURE STATEMENT

The Examiner is respectfully requested to consider the enclosed documents, which are listed on the attached form PTO 1449.

The relevance of some of the references cited are shown in the International Search Report filed herein on April 11, 2005, dated January 20, 2004, which indicates the degree of relevance found by the Japanese Patent Office.

JP 6-93114 A

This reference shows examples of sulfonated polyetherketones obtained by direct sulfonation of their aromatic ring. These sulfonated resins are different from the present polymer having sulfoalkyl group in the point having no alkyl side chain.

These sulfonated resins are obtained conveniently, but stability of the sulfonic acid groups are lacking because the precursor resins are sulfonated directly.

JP 9-245818 A

This reference shows examples of sulfonated polyetherketones obtained by direct sulfonation of their aromatic ring. These sulfonated resins are different from the present polymer having sulfoalkyl group in the point having no alkyl side chain.

These sulfonated resins are obtained conveniently, but stability of the sulfonic acid groups are lacking because the precursor resins are sulfonated directly.

JP 11-116679 A

This reference shows examples of sulfonated polyetherketones obtained by direct sulfonation of their aromatic ring. These sulfonated resins are different from the present polymer having sulfoalkyl group in the point having no alkyl side chain.

These sulfonated resins are obtained conveniently, but stability of the sulfonic acid groups are lacking because the precursor resins are sulfonated directly.

JP 2002-110174 A

This reference shows examples of hydrocarbon type polymers in which sulfoalkyl groups are introduced. This sulfoalkylation method is different from the method according to the present invention of converting a leaving group of alkyl side chain having a leaving group into an acylthio group (acylthiolating), and then oxidizing the acylthio group.

Examples of sulfoalkylation with sultone and sulfomethylation with sodium sulfate are presented in the Examples of the specification. However, each reaction of them proceeds so slowly that enough amount of sulfoalkyl groups are not able to be introduced into the polymer matrix.

Makromol. Chem., Rapid Commun., 1, 1980, 297-302

This article shows examples of hydrocarbon type polymers in which sulfoalkyl groups are introduced. Sulfonation methods such as sulfonating of chloroalkyl groups by producing thiocarbamide salts and then oxidizing them are presented.

These methods are different from the method according to the present invention of acylthiolating and oxidizing. In the article, it was scarcely able to prove that the expected product was obtained because identifying of the product by any processes is not enough and its properties are different from each other.

Makromol. Chem., 184, 1983, 1585-1596

This article shows examples of hydrocarbon type polymers in which sulfoalkyl groups are introduced. Methods of introducing sulfoalkyl group by Friedel-Crafts reaction, sulfonation and reduction are described.

These methods are different from the method according to the present invention of acylthiolating and oxidizing. In the article, it was scarcely able to prove that the expected product was obtained because identifying of the product by any processes is not enough and their ion-exchange capacities don't satisfy the desired value.

J. Appl. Polym. Sci., 40, 1990, 709-717

This article relates to surface-modified hollow fibers, and polysulfone fibers having sulfopropyl group modified with propane sultone are described.

These methods of the article are different from the method according to the present invention of acylthiolating and oxidizing. The polysulfone fibers don't have enough ion-exchange ability because they were surface-modified and the sulfopropyl groups exist on the surface only.

Copies of the non U.S. Patents listed on the attached form are enclosed herewith.


I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on **July 14, 2005**



Signature: **Kevin S. Lemack**

Date: **July 14, 2005**

Respectfully submitted,


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FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 576P062	SERIAL NO. 10/530,981
	Masahiro Hamada et al.	
	FILING DATE April 11, 2005	GROUP Not yet assigned

REFERENCE DESIGNATION
U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	2,892,852	6/1959	Koenig	260	400	
	AB						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	BA	06-093114	4/1994	Japan			*	
	BB	09-245818	9/1997	Japan			*	
	BC	11-116679	4/1999	Japan			*	
	BD	2002-110174	4/2002	Japan			*	

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)

	CA		Makromol. Chem., Rapid Commun. 1, 297-302 (1980); Frank Doscher et al.; "Synthesis of Sulfoalkylated Styrene-Divinylbenzene-Copolymers"
	CB		Makromol.Chem. 184, 1585-1596 (1983); Herrn Prof. Dr. H.J. Cantow;
	CC		Journal of Applied Polymer Science, Vol. 40, 709-717 (1990); Akon Higuchi et al.; "Surface-Modified Polysulfone Hollow Fibers. II. Fibers Having CH ₂ CH ₂ Ch ₂ SO ₃ -Segments and Immersed in HC1 Solution"
	CD		Copy of the International Search Report dated 1/20/04.

EXAMINER	DATE CONSIDERED
EXAMINER: Initial reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	